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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/537,358	06/03/2005	Kiyohito Hiromitsu	8007-1093	2651

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EXAMINER	
WEBB, GREGORY E	

ART UNIT	PAPER NUMBER
1796	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/537,358	HIROMITSU ET AL.	
	Examiner	Art Unit	
	Gregory E. Webb	1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *05 October 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-9* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☐ Claim(s) *1-8* is/are rejected.

7)☐ Claim(s) *9* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-2, and 4-8 are rejected under 35 U.S.C. 102(b) as being anticipated by Policicchio (US 6101661).

Concerning the heat sealing, Policicchio, Nicola John teaches the following:

Referring to the figures which depict the **cleaning pad** of the present invention, FIG. 3 is a perspective view of a removable **cleaning pad** 200 comprising a scrubbing layer 201, an attachment layer 203 and an absorbent layer 205 positioned between the scrubbing layer and the attachment layer. For simplicity, **cleaning pad** 200 is not depicted as having multiple widths in the z-dimension. As indicated above, while FIG. 3 depicts each of layers 201, 203 and 205 as a single layer of material, one or more of these layers may consist of a laminate of two or more plies. For example, in a preferred embodiment, scrubbing layer 201 is a two-ply laminate of carded polypropylene, where the lower layer is slitted. Also, although not depicted in FIG. 3, materials that do not inhibit fluid flow may be positioned between scrubbing layer 201 and absorbent layer 205 and/or between absorbent layer 205 and attachment layer 203. However, it is important that the scrubbing and absorbent layers be in substantial fluid communication, to provide the requisite absorbency of the **cleaning pad**. While FIG. 3 depicts pad 200 as having all of the pad's layers of equal size in the x and y dimensions, it is preferred that the scrubbing layer 201 and attachment layer 203 be larger than the absorbent layer, such that layers 201 and 203 can be bonded together around the periphery of the pad to provide integrity. The scrubbing and attachment layers may be bonded to the absorbent layer or to each other by any of a variety of bonding means, including the use of a uniform continuous layer of **adhesive**, a patterned layer of **adhesive** or any array of separate lines, spirals or spots of **adhesive**. Alternatively, the bonding means may comprise heat bonds, pressure bonds, ultrasonic bonds, dynamic mechanical bonds or any other suitable bonding means or combinations of these bonding means as are known in the art. Bonding may be around the perimeter of the **cleaning pad**, and/or across the surface of the **cleaning pad** so as to form a pattern on the surface of the scrubbing layer 201.

Concerning the fibrous sheet, Policicchio, Nicola John teaches the following:

FIG. 4 is a blown perspective view of the absorbent layer 305 of an embodiment of a **cleaning pad** of the present invention. The **cleaning pad**'s scrubbing layer and optional attachment layer are not shown in FIG. 4. Absorbent layer 305 is depicted in this embodiment as consisting of a tri-laminate structure. Specifically absorbent layer 305 is shown to consist of a discrete layer of particulate superabsorbent gelling material, shown as 307, positioned between two discrete layers 306 and 308 of fibrous material. In this embodiment, because of the region 307 of high concentration of superabsorbent gelling material, it is preferred that the superabsorbent material not exhibit gel blocking discussed above. In a particularly preferred embodiment, **fibrous layer**s 306 and 308 will each be a thermally bonded fibrous substrate of cellulosic fibers, and lower **fibrous layer** 308 will be in direct fluid communication with the scrubbing layer (not shown). (Layer 307 may alternatively be a mixture of fibrous material and superabsorbent material, where the superabsorbent material is preferably present in a relatively high percentage by weight of the layer.) Also, while depicted as having equal widths, in a preferred embodiment layer 306 will be wider than layer 307 and layer 307 will be wider than layer 308. When a scrubbing and attachment layer are included, such a combination will provide a pad having multiple widths in the z-dimension.

Concerning the cleaning material, thermoplastic resin, and thermoplastic resin film, Policicchio, Nicola John teaches the following:

Thermoplastic materials useful in the present invention can be in any of a variety of forms including particulates, fibers, or combinations of particulates and fibers. Thermoplastic fibers are a particularly preferred form because of their ability to form numerous interfiber bond sites. Suitable **thermoplastic** materials can be made from any **thermoplastic** polymer that can be melted at temperatures that will not extensively damage the fibers that comprise the primary web or matrix of each layer. Preferably, the melting point of this **thermoplastic** material will be less than about 190.degree. C., and preferably between about 75.degree. C. and about 175.degree. C. In any event, the melting point of this **thermoplastic** material should be no lower than the temperature at which the thermally bonded absorbent structures, when used in the **cleaning pad**s, are likely to be stored. The melting point of the **thermoplastic** material is typically no lower than about 50.degree. C.

Concerning the two layers, Policicchio, Nicola John teaches the following:

31. The **cleaning pad** of claim 30 wherein the **second layer** of the absorbent layer comprises a fibrous material and the first and third layers of the absorbent layer comprise superabsorbent material.

Concerning the moldable body, and mold, Policicchio, Nicola John teaches the following:

It will be recognized that while the discussion above relates primarily to **cleaning pad**s having 2 or 3 layers that decrease in width to provide the desired decrease in overall pad width in the z-dimension, it may be preferred to use more than 3 discrete layers, particularly when the individual layers are relatively thin. Of course, as discussed above, in certain embodiments there will be only one discrete layer, such as where a material is **molded** to provide the desired decreasing width.

3. Claims 1-2, and 4-8 are rejected under 35 U.S.C. 102(b) as being anticipated by

Policicchio (US 6669391).

Concerning the mold, Policicchio, Nicola John teaches the following:

It will be recognized that while the discussion above relates primarily to **cleaning pad**s having two or three layers that decrease in width to provide the desired decrease in overall pad width in the z-dimension, it can be preferred to use more than three discrete layers, particularly when the individual layers are relatively thin. Of course, as discussed above, in certain embodiments there will be only one discrete layer, such as where a material is **molded** to provide the desired decreasing width.

Concerning the thermoplastic resin, and thermoplastic resin film, Policicchio, Nicola John teaches the following:

Thermoplastic materials useful in the present invention can be in any of a variety of forms including particulates, fibers, or combinations of particulates and fibers. Thermoplastic fibers are a particularly preferred form because of their ability to form numerous interfiber bond sites. Suitable **thermoplastic** materials can be made from any **thermoplastic** polymer that can be melted at temperatures that will not extensively damage the fibers that comprise the primary web or matrix of each layer. Preferably, the melting point of this **thermoplastic** material will be less than about 190.degree. C., and preferably between about 75.degree. C. and about 175.degree. C. In any event, the melting point of this **thermoplastic** material should be no lower than the temperature at which the thermally bonded absorbent structures, when used in the **cleaning pad**s, are likely to be stored. The melting point of the **thermoplastic** material is typically no lower than about 50.degree. C.

Concerning the cleaning material, mold cleaning, and heat sealing, Policicchio, Nicola John teaches the following:

Functional cuffs can be formed as an integral part of the lower layer of the present

cleaning pad or the substrate of the present **cleaning** sheet, or separately **adhered** to the **cleaning pad** and/or sheet. If the functional cuffs are an integral part of the lower layer of the **cleaning pad** and/or sheet, the functional cuffs are preferably a looped functional cuff formed by crimping the **cleaning pad** lower layer or **cleaning** sheet substrate, for example, in a Z-fold and/or C-fold. Alternatively, the functional cuffs can be separately **adhered** to the lower layer of a **cleaning pad** and/or **cleaning** sheet via a variety of methods known in the art including, but not limited to, double-sided **adhesive** tape, heat bonding, gluing, ultrasonic welding, stitching, high-pressure mechanical welding, and the like.

Concerning the outermost layer, Policicchio, Nicola John teaches the following:

In an alternative embodiment of an "all-in-one" **cleaning** implement, the **cleaning** implement comprises a dry, **cleaning** sheet in combination with an absorbent **cleaning pad** to form a single dry/wet **cleaning** substrate. The dry/wet **cleaning** substrate can comprise a storage layer having a high absorptive capacity (e.g., 100-1000 grams), an attachment layer, and a liquid pervious scrubbing layer. This storage layer preferably attaches directly to velcro hooks located on a mop head of the "all-in-one" **cleaning** implement. The other part of the pad preferably lays directly over the storage layer and is preferably in direct contact with floor (this defined as a primary floor pad). The primary floor pad can be used for dry mopping and/or wet mopping. This primary pad floor pad can be a composite having an **outer layer** of materials effective at picking up particulate soils (i.e. hydroentangled polyester), an absorbent layer for absorbing some liquid (20-100 g capacity), and an **outer layer** that would allow solution and dirt to pass through into the lower higher absorbing storage pad and could be used for attaching primary pad to mop head by attaching on top of mop head containing attachment structures or mechanical clips.

Concerning the fibrous sheet, Policicchio, Nicola John teaches the following:

FIG. 3 is a blown perspective view of the absorbent layer 305 of an embodiment of a **cleaning pad** of the present invention. The **cleaning pad**'s scrubbing layer and optional attachment layer are not shown in FIG. 3. Absorbent layer 305 is depicted in this embodiment as consisting of a tri-laminate structure. Specifically absorbent layer 305 is shown to consist of a discrete layer of particulate superabsorbent gelling material, shown as 307, positioned between two discrete layers 306 and 308 of fibrous material. In this embodiment, because of the region 307 of high concentration of superabsorbent gelling material, it is preferred that the superabsorbent material not exhibit gel blocking discussed above. In a particularly preferred embodiment, **fibrous layer**s 306 and 308 will each be a thermally bonded fibrous substrate of cellulosic fibers, and lower **fibrous layer** 308 will be in direct fluid communication with the scrubbing layer (not shown). (Layer 307 can alternatively be a mixture of fibrous material and superabsorbent material, where the superabsorbent material is preferably present in a relatively high percentage by weight of the layer.) Also, while depicted as having equal widths, in a

preferred embodiment layer 306 will be wider than layer 307 and layer 307 will be wider than layer 308. When a scrubbing and attachment layer are included, such a combination will provide a pad having multiple widths in the z-dimension.

Concerning the two layers, Policicchio, Nicola John teaches the following:

For purposes of the present invention, an "upper" layer of a **cleaning pad** is a layer that is relatively further away from the surface that is to be cleaned (i.e., in the implement context, relatively closer to the implement handle during use). The term "lower" layer conversely means a layer of a **cleaning pad** that is relatively closer to the surface that is to be cleaned (i.e., in the implement context, relatively further away from the implement handle during use). As such, the scrubbing layer is preferably the lower-most layer and the absorbent layer is preferably an upper layer relative to the scrubber layer. The terms "upper" and "lower" are similarly used when referring to layers that are multiply (e.g., when the scrubbing layer is a two-ply material). In terms of sequential ordering of layers (e.g., first layer, **second layer**, and third layer), a first layer is a "lower" layer relative to a **second layer**. Conversely, a third layer is an "upper" layer relative to a **second layer**. The terms "above" and "below" are used to describe relative locations of two or more materials in a **cleaning pad**'s thickness. By way of illustration, a material A is "above" material B if material B is positioned closer to the scrubbing layer than material A. Similarly, material B is "below" material A in this illustration.

Concerning the porosity, Policicchio, Nicola John teaches the following:

As a result of the density gradient, the **porosity**, meaning the ratio of the volume of interstices of a material to the volume of its mass, of the absorbent layer will typically decrease as the density increases. The **porosity** is important, particularly in the context of a **cleaning pad** for **cleaning** hard surfaces, because the liquid to be absorbed by the **cleaning pad** typically contains moderate amounts of relatively large particulate matter. As the soiled liquid enters the **cleaning pad** through the scrubbing layer, the larger particulate matter becomes entrapped in the interstices of the lower absorbent layers. As the **porosity** of the absorbent layers decreases, and the density increases, the larger particulate matter becomes trapped in the larger interstices of the lower absorbent layers and the remaining liquid is then transferred to the upper absorbent layers. This allows the liquid to be more easily transferred towards the higher-density layers and allows the particulate matter to remain trapped in the interstices of the lower absorbent layers. As a result, the **cleaning pad** retains both liquid and particulate matter much more effectively than **cleaning pad**s without a strong density gradient.

Concerning the moldable body, Policicchio, Nicola John teaches the following:

12. The **cleaning** implement of claim 11 wherein said mop head further comprises at least one attachment structure disposed on said mop head for receiving and retaining said attachment layer of said **cleaning pad** about said mop head, wherein said

attachment structure is formed from a **flexible material** and wherein said attachment structure further comprises a plurality of substantially pie-shaped sections wherein two sides of each of said pie-shaped sections are defined by slits passing through said **flexible** material such that each of said pie-shaped sections can be deflected to receive the **cleaning** sheet or **cleaning pad**.

4. Claims 1-8 are rejected under 35 U.S.C. 102(b) as being anticipated by Ohara (US 6739161). Ohara teaches a cleaning material containing a support layer (layer 31) made of a cushioning material. The cushioning material is taught can be made from synthetic rubbers (see col. 3, lines 40-60).

Concerning the adhesive attachment, Ohara, Yasuyuki teaches the following:

The adhesive film 32 and the sticking layer 34 are preferably formed with adhesive that is flexible after being hardened. Further, the adhesive film 32 and the sticking layer 34 are preferably heat resistant and flexible so that the film 32 and the layer 34 can be used in a curved state. As a tackifier having these characteristics, a rubber based or acrylic pressure-sensitive adhesive is used. The adhesive film 32 and the sticking layer 34 are formed by applying **pressure-sensitive adhesive** on the top surface and the back surface of the supporting layer 31. Alternatively, the film 32 and the layer 34 may be formed by applying pressure-sensitive adhesive on the surfaces of a stretch core material, and attaching the core material to the surfaces of the supporting layer 31. In this embodiment, the adhesive film 32 and the sticking layer 34 are formed with double-faced tapes that have acrylic adhesive. Specifically, the adhesive film 32 is made of double-faced tape #500, which is a product of Nitto Denko Corporation, and the sticking layer 34 is made of double-faced tape #5000NC, which is also a product of Nitto Denko Corporation.

Concerning the cleaning material, thermoplastic resin, mold cleaning, synthetic rubber, rubber, thermoplastic resin film, heat sealing, and natural rubber, Ohara, Yasuyuki teaches the following:

In the **cleaning material** 30 shown in FIG. 1, the cushioning material forming the supporting layer 31 preferably has elasticity, high durability, and high heat resistance, and is capable of being bonded by **adhesive**. Such cushioning material may be resin foam such as polyurethane, polystyrene, and polypropylene. The cushioning material also may be **synthetic rubber** such as ethylene-propylene-diene copolymer **rubber** (EPDM) and chloroprene **rubber**, or **natural rubber**. Alternatively, the cushioning material may be **thermoplastic** elastomer such as olefin based elastomer and a

styrene based elastomer.

Claim Objections

5. Claim 9 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

6. The prior art fails to teach or suggest the applicant's very specific method of using the cleaning material of claim 1 in a process involving sandwiching the cleaning material under heat and pressure and including the cleaning step.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gregory E. Webb whose telephone number is 571-272-1325. The examiner can normally be reached on 9:00-17:30 (m-f).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Harold Pyon can be reached on 571-272-1498. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Gregory E. Webb/
Primary Examiner, Art Unit 1796

Gregory E. Webb
Primary Examiner
Art Unit 1796

gew